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UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics

v.D.

W OUTLOOK FOR FOOD IN 1943

An Evaluation of the Past, Present, and Prospective Food Supplies
by the Bureau of Agricultural Economics

together with

An Estimate of the Nutritive Value of the Probable 1943 Food Supply
by the Bureau of Home Economics

W Washington, D. C.
September 1942

FOREWORD

With the country at war and with increasing demands upon our food resources by our Allies, by our armed forces and by civilians, the Government is faced with many urgent problems relating to the setting up of production goals, controlling of prices and food rationing. In order to assist in the solution of these problems a comprehensive evaluation of the past, present and prospective food supplies in this country is here presented.

This report, prepared by the Division of Statistical and Historical Research, Bureau of Agricultural Economics, contains detailed statistics concerning the production and disposition of the major food items in 1941, the average for the period 1935-39 and estimates of food production and supplies for the years 1942 and 1943. Besides this, the report contains an analysis of the estimated 1943 supplies of food in relation to the possible demand resulting from the expected increase in purchasing power. In the light of the results herein contained, certain suggestions are offered for possible action by the Department.

Also incorporated in this report is an estimate of the nutritive value of the probable 1943 food supply which has been made by the Bureau of Home Economics, together with certain nutritional information useful in planning substitutes for food for which the supply is short.

It is hoped that this report will supply useful information for the guidance of policy-forming agencies both in and outside of the Department. The estimates of food production and supplies for 1943 presented here are, of necessity, preliminary and will be revised from time to time as new information becomes available. However, in making up these estimates, every effort was made to give as accurate a picture of the 1943 food situation as is possible at present.

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GENERAL SUMMARY

Total food production in the United States in 1942 is the largest on record and the production in 1943, if the weather is favorable, may be about as large, in spite of increasing difficulties that may be encountered in maintaining production. Our soldiers will have first choice and they will be well fed. Large quantities will be taken for the allied nations. Military and lend-lease requirements will take an increasing share out of the total food supply, but the quantities available to civilians per person in 1942 are greater than the pre-war 1935-39 average. Available per capita civilian supply in 1943 may be somewhat less than in 1941 or 1942 but, nevertheless, larger than the pre-war average (table 1).

There will be an abundant supply of cereals and grain products in 1943. The per capita supply of poultry and eggs will be the largest on record. A large per capita civilian supply of sweetpotatoes and dry edible beans is in prospect. The civilian supply per person of dairy products is expected to be smaller than in either 1941 or 1942 but larger than the for 1935-39 average. There will be a smaller per capita supply of meats than in 1941 but larger than in 1942 or the pre-war average. The per capita supply of fish, fats and oils, fruits, and vegetables is expected to be smaller than in the previous 2 years. Sugar consumption will be reduced below the pre-war average by rationing.

The nutritional value of the civilian food supply in prospect for 1943 appears to be about as good as the average for 1935-36. However, the food may contain less fats, carbohydrates and vitamin A than in 1941. In this connection it should be observed that many of the heaviest users of fats and carbohydrates have been shifted from the civilian to the

Table 1.- Per capita civilian supply of selected foods, United States,
1935-39 average, 1941, estimated 1942-43 and
percentage comparisons - Continued

Commodity					1943 as percentage of		
	1935-39: average:		1941	1942	1935-39: average:	1941	1942
	Pounds	Pounds	Pounds	Pounds	Percent	Percent	Percent
<u>Fruits</u>							
Fresh							
Citrus	50.0	61.4	58.0	60.0	120.0	97.7	103.1
Apples	41.9	40.7	40.0	30.5	72.8	74.9	75.1
Melons	--	29.8	26.8	27.2		91.3	101.1
Other	59.7	62.9	45.4	42.8	71.7	68.0	94.3
Total (excluding melons)	151.4	165.0	143.4	133.3	88.0	80.8	93.1
Total	--	194.8	170.2	160.5	--	82.4	94.1
<u>Canned</u>							
Citrus6	.78	.83	.78	130.0	100.0	94.0
Other	13.7	19.4	16.0	11.9	86.9	61.3	74.1
Total	14.3	20.2	16.8	12.7	88.5	62.9	75.6
Canned juices	4.4	12.0	7.1	7.7	175.0	64.2	108.5
Dried	6.0	6.5	6.9	5.3	88.3	81.5	76.8
Frozen	--	1.2	1.4	1.8	--	150.0	123.0
Brined	--	.70	.63	.68	--	97.1	107.0
<u>Vegetables</u>							
Fresh							
Leafy, green and yellow:	82.1	78.7	82.2	74.3	90.5	94.4	90.1
Other	120.4	127.8	128.1	124.1	103.1	97.1	96.0
Total	202.5	206.5	210.2	198.4	98.0	96.1	94.6
Canned							
Leafy, green and yellow:	--	12.2	11.4	8.5	--	69.7	74.6
Other	--	20.7	22.4	19.0	--	91.8	84.8
Total	--	32.9	33.8	27.5	--	83.6	81.4
Other							
Potatoes	144.9	139.2	141.6	135.3	93.4	97.2	95.6
Sweetpotatoes	27.5	22.2	23.1	24.5	89.1	110.4	106.1
Beans, dry, edible	9.2	9.8	9.4	9.9	107.6	101.0	105.5
<u>Sugar</u>							
Raw	104.0	112.0	87.0	6/ 74.8	71.9	66.8	86.0
Refined	97.2	104.7	81.3	6/ 69.9	71.9	66.8	86.0
Index of per capita consumption 8/.....	100	111	110	108	7/ 82.9	85.3	79.2

1/ Barley: Amount used for malt and malt products. Barley cereals are negligible and have not been included. 2/ Corn: Corn meal, corn flour, hominy grits (dry-process products); corn starch, sugar, syrup, dextrose, corn oil (wet-process products); breakfast foods; and farm household consumption (mostly meal). 3/ Wheat: White and whole wheat flour, and cereals. 4/ Oats: Oatmeal. 5/ Rye: Rye flour. 6/ Assuming 1/2-pound ration. 7/ Assuming 3/4-pound ration. 8/ Weighted by Bureau of Labor Statistics retail prices, 1935-39, for commodities or groups of commodities (1935-39 = 100).

military class of consumers. The effect of this, however, may be offset by fuller employment and heavier work involved in the war effort.

The reduction in the supply of fats and carbohydrates for civilian consumption could be made up by careful conservation of fats, the consumption of more cereals, and some increase in the production of butterfat. An increase in the supply of butterfat would also contribute to making up the deficiency in vitamin A, but a larger production of leafy, green, and yellow vegetables than is in prospect would be required to make up fully this deficiency.

Although more of the civilian population have sufficient income to purchase an adequate diet, many will continue to be malnourished or under-nourished. Malnutrition will continue as usual to be due partly to a poor choice of foods and partly to the fact that incomes will still not be adequate to purchase minimum nutritional requirements. Higher prices will tend to lift some commodities out of the reach of lower-income families. The establishment of price ceilings and rationing may be helpful to some extent in protecting low-income families, but some will still need such relief aids as have been used in the past.

The distinguishing feature of the situation, however, is not the total supply or its nutritive content but rather the unusually large civilian demand for most foods.

Consumers' spendable income in 1942 is estimated to be about 20 percent larger than last year and about 65 percent larger than the average for the period 1935-39. With the reduction of expenditures for durable goods, some of which are no longer available to the civilian consumer, the spendable income for other than durable goods is estimated to be 37 percent

larger than in 1941 and 97 percent larger than the average for the period 1935-39. While a large portion of this income will be used for clothing, other nondurable goods, and savings, the amount left for food products is much larger than in previous years. With this extra money available, the demand on the part of consumers for larger quantities and better quality of food naturally increases. In the absence of wartime controls this demand would be adjusted to the available supply through rising prices which would absorb the increased income of consumers and at the same time greatly increase the cost of the war. However, with price ceilings placed on most foods, the consumer has enough income to buy more than is available.

The discrepancy between the large demand and the available supply, together with transportation and distribution difficulties, has tended to cause local and over-all shortages. This situation is expected to continue for the remainder of 1942 and into 1943. In fact, the 1943 situation is likely to get worse. As price ceilings are placed on additional food commodities, and at the same time spendable income for other than durable goods is increased, the effect will be to put pressure on the prevailing and prospective price ceilings. The pressure will be particularly noticeable on ceilings for meats, dairy products, fish, and possibly fats and oils. The demand for cheese, eggs, poultry, and butter will be accentuated by the fact that they are partial substitutes for meats, fish, and edible fats. The supply of cereals will be large enough to meet all requirements and any pressure on prices will be due to larger demand for grain for feed rather than food.

The expected pressure on price ceilings, the local shortages already existing, and the desirability of increasing the nutritive content of the

food supply, point to the necessity for rationing available supplies of certain commodities and taking steps to increase production of these commodities or their substitutes.

The supply of meats and poultry could be enlarged by increasing production of broilers and turkeys and by a further increase in the fall pig crop. The supply of dairy products could be increased by substantial subsidies. The supply of proteins could also be enlarged by increasing the production of cheese and of dry skim milk for human consumption. Fats and oils supplies could be enlarged by encouraging larger production of peanuts for oil and by an educational campaign stressing the more economical use of cooking fats.

In estimating the 1943 food supply, it has been assumed that action will be taken by the Department to insure proper distribution or allocation of supplies of farm labor, machinery and fertilizer, and that facilities for transportation, especially from farms to shipping points, will be available where and when needed. These problems require immediate attention.

HOW ESTIMATES WERE OBTAINED

With the exception of sugar and fish, the food statistics for the 1935-39 average, 1941, 1942 and 1943 were compiled by the commodity specialists of the Bureau of Agricultural Economics. The statistics on fish were supplied by the Bureau of Fish and Wildlife, Department of Interior; and on sugar, by the Office of Foreign Agricultural Relations, United States Department of Agriculture.

Estimates of lend-lease requirements were obtained from the Agricultural Marketing Administration through the Foods Requirements Committee. Estimates for military requirements for the fiscal years 1943 and 1944 for the Army and Navy and fiscal 1942 for the Navy were obtained through the Foods Requirements Committee from the Office of the Quartermaster General. Estimates of fiscal 1941 food consumption in the Navy were obtained directly from the Navy Department. From these data, together with further information on per capita consumption in the Army and an estimated military strength, estimates for the calendar years 1941, 1942 and 1943 were derived.

In estimating production for each of the commodities the specific factors that were taken into account are as follows:

Beef: Estimates of beef production were based upon the number of cattle on farms, trends in marketings, and the likely effect of price relationships upon production and marketing.

Veal: In estimating production of veal consideration was given to the upward trend in dairy animals being kept for milk and the effect of this upon the production and marketing of veal calves.

Lamb and Mutton: In estimating production of lamb and mutton, the same consideration was given as in estimating production of beef.

Pork: Production of pork for 1943 is pretty well determined by the pig crop for 1942. Consideration was also given to the hog-corn ratio which is at present favorable for continued high level production.

Eggs: As a result of a 10 percent increase in the number of chickens raised in 1942, the number of layers in 1943 was estimated to be 6 to 8 percent larger than in 1942. It was assumed, moreover, that the egg-feed price ratios are likely to be considerably more favorable than average and that the production per hen is not likely to be over that of 1942.

Chickens: It is estimated that in many sections of the country laying houses will be filled to capacity by the end of 1942. Therefore, the number of chickens raised on farms in 1943 for egg-laying purposes may be little different from 1942. As regards broilers, if no Government action is taken, it was assumed that the production would be about 10 percent higher than in 1942.

Turkeys: Turkey production, without action by the Government, was assumed to be about the same as 1942.

Dairy Products: The specific factors considered in estimating milk production in 1943 were the feed-price ratio, total available feed supplies, the labor supply, competition from hogs and beef cattle, and the probable number of cows on farms.

Fats and Oils: Estimates of the quantities of fats and oils available for food in 1943 are based on the allocation order recently issued by the War Production Board. The order was made effective October 1, 1942. The order requires each manufacturer of food products using 6,000 pounds or more of fats and oils quarterly to limit his use of fats to a specified percentage of the average use in the 2 years 1940 and 1941. Thus, the use of fats by margarine manufacturers will be limited to 110 percent of the base period use, and the use of fats by manufacturers of all other edible products, exclusive of butter and lard, will be limited to 90 percent of the base period use. Limitations also will apply to manufacturers of non-food products. The manufacture of food fats for military use is not restricted by the order. An adjustment reserve is provided to take care of

specific hardships that may arise under the allocation program. In this report it is assumed that all the land produced and not required for export will be consumed.

Fruits: On the basis of past experience and production trends, the total production of fruit was first estimated. Then, taking into account the expected tin situation and the prospective requirements for dried fruits the total production was distributed among fresh, canned, frozen, and dried uses.

Vegetables: In estimating the production of vegetables, the total feasible acreage and previous yields per acre together with the expected labor shortages and transportation difficulties were taken into account. On the canned vegetable pack, consideration was also given to the probable tin restrictions in 1943 and trends in production of processing crops.

Wheat, Rye and Rice: In estimating the production of wheat and rye an account was taken of the feasible acreage and a 20-year average yield. In the case of rice, an estimate was made of the feasible production.

Demand and Price Forecasts: The demand for specific food commodities was estimated on the basis of past relationships between consumption, price and income. It was generally assumed that the national income in 1943 would increase about 13 percent over this year. It was also assumed that with few exceptions, no changes in expected price ceilings will be made in 1943. Where ceilings are not in effect, prices were assumed at some expected or reasonable level.

FEASIBLE PRODUCTION COMPARED WITH ASSUMED PRODUCTION

In estimating the production of foods in 1943 the commodity specialists were, with a few exceptions, guided by the "feasible" production contained in the report "Agriculture's Wartime Production Capacity" by the Interbureau Committee, August 1942. The comparison between the "feasible" production given by the Committee and the assumed production in this report is as follows:

Meat: Because of the lag in time of production and time of marketing for most meat animals the estimated meat production for 1943 shown in this report cannot be compared directly with the estimates of "feasible" livestock production given by the Interbureau Committee. The estimates, however, are in line with the trend and level of production recommended by the Committee as feasible. In large measure, pork production in 1943 is already determined by the 1942 pig crop. Beef production in any one year depends more upon the number of animals actually slaughtered that year than upon the year's farm production.

Eggs: "Feasible" egg production in 1943 is given in the report by the Interbureau Committee as 6 percent over 1942 which is the same as assumed in this report.

Chickens: The estimated "feasible" in 1943 is 11 percent over 1942. In this report an increase of only 5 percent was considered. The smaller

percentage increase was due to a consideration of probable egg-feed and chicken-ho; price ratio and the likelihood that the feasible estimate probably was biased upward because it was made before this year's large crop was raised.

Milk: The "feasible" production of milk for 1947 was estimated by the Interbureau Committee to be about 124 billion pounds provided the feed-price ratio remains as favorable as in 1941. However, if the feed price ratio in 1947 should remain at present levels, the feasible production for 1947 was estimated to be about 119 to 122 billion pounds. In this report 120 billion pounds was taken as the most likely estimate assuming no subsidies.

Fruits: For fruits "feasible" production as estimated by the Interbureau Committee and the assumed production used in this report are identical.

Vegetables: For both fresh and processing crops, the assumed production in this report is, in large part, comparable with the feasible acreage as estimated by the Interbureau Committee.

Grains: In the case of wheat and rye, "feasible" acreage was used but not feasible production. The estimated production of wheat and rye in this report is slightly less than what is estimated as feasible by the committee. In the case of rice, the feasible and assumed are the same.

AN ANALYSIS OF THE FOOD SURVEY FOR 1943 1/

An abundant supply of some foodstuffs is assured for the remainder of 1942 and for 1943, but in some cases the supply for the year ahead may be a little short of average and short of what would be taken at prices now current unless production is increased. There will be an ample supply of cereals out of the large stocks and crops of 1942 to be carried over into 1943. Even if the 1943 cereal crops are short, there will still be a plentiful supply of cereals for human consumption in the United States after all lend-lease and export requirements are met. Furthermore, there is an abundance of foodstuffs to maintain the present high level of livestock production for 1943 but larger quantities of some products would be consumed if available at present prices. The supply of poultry and eggs available for civilian consumption probably will be larger than in any recent year, and considerably larger than the pre-war average. The civilian supply of meats per person in 1943 seems likely to be larger than in 1942, and considerably larger than the pre-war average. There may be a smaller per capita quantity of beef than this year but more pork. The per capita supply of dairy products will be smaller than in either 1941 or 1942 but larger than the pre-war average.

Restrictions upon navigation may result in a smaller than average quantity of fish, but the reduction in this item will be offset by increases in the supply of poultry meat.

1/ Should prices of all foods be stabilized at present or parity levels, the discussion of price changes in this analysis, of course, will not be applicable.

Table 2.- Meats: Supply and disposition, calendar years, 1935-36 onwards,
1941 and estimated 1942-43

Year	Supply					Disposition				
	In- stocks	In- flock	Local or year	Total exports	Lease	In- stocks	End of year	Total exports	Domestic dis- tribution	
	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
Dressed weight basis										
Beef										
1935-39	1,954	211	312	1,270	52	99	7,5	7,5	7,5	7,5
1941	8,101	302	107	8,510	192	135	.45	7,958	7,958	6
1942	9,100	150	135	9,385	30	30	135	870	8,520	6
1943	1,100	100	133	9,520	25	75	135	3,222	6,298	6
Venal										
1935-39	1,051			1,057						
1941	1,055			1,059						
1942	1,066			1,060						
1943	1,066			1,100						
Lamb and mutton										
1935-39	811		5	1170	2	5				
1941	555		5	950	7	8				
1942	555		5	963	5	5				
1943	1,025		5	1,115						
Pork marketing trend										
1935-39	7,337	48	502	7,857	143	458				
1941	9,451	12	656	10,119	75	572	469			
1942	11,150		469	11,619	69	2,560	600			
1943	12,675		600	13,215	50	1,121	669			
All meats										
1935-39	16,469	202	619	17,050	197	562				
1941	19,506	314	768	20,588	210	572	612	505	18,629	142.0
1942	22,265	150	612	23,027	202	2,590	740	1,761	17,828	137.0
1943	24,065	100	740	24,905	75	3,202	740	3,095	17,793	140.7

that the meat supply for civilian consumption is not sufficient to satisfy the demand for all meats will be reflected in a further reduction in the civilian supply of meat, poultry and game. This, as well as the possibilities of increasing the production of certain substitutes for meat, will be discussed in a later section.

Poultry Products

Eggs: The civilian supply of eggs for 1943 (table 3) is estimated to be 5,175 million pounds compared with 5,140 million pounds in 1942, 5,158 million pounds in 1941 and an average of 4,843 million pounds for the period 1935-39. On a civilian per capita basis, this amounts to 40.4, 39.5, 39.3 and 37.9 pounds respectively. Thus, on a per capita basis, the civilians in 1943 are expected to have 2.3 percent more eggs than in 1942, 2.8 percent more than in 1941 and 7.7 percent more than the average for the period 1935-39.

Because of the stronger consumer demand in prospect, egg prices in 1943 are likely to be at least 10 to 15 percent higher than prices this year. Egg prices are likely to reach the minimum ceiling level of 110 percent of parity by about August 1943 and with a tighter meat situation, the pressure on egg prices may become great by the end of next year. If egg prices were frozen at the present level, and allowing for seasonal variation, it is estimated that the demand for eggs in 1943 would be 42.7 pounds per capita. This is 2.3 pounds per capita more than is in prospect. To supply this increase would require 292 million pounds or 194 million dozen eggs more than is estimated in this report.

Chickens: The civilian supply of chickens for 1943 (table 3) is estimated to be 2,991 million pounds compared with 2,945 million pounds in 1942, 2,648 million pounds in 1941 and an average of 2,411 million pounds for the period 1935-39. On a civilian per capita basis, this is 23.6, 22.6, 20.2, and 18.7 pounds respectively. The per capita supply of chickens in 1943 is estimated to be 4.4 percent more than in 1942, 16.8 percent more than in 1941 and 26.2 percent more than the average for the period 1935-39.

Assuming that chicken prices are frozen at about the present level, the demand for chicken in 1943 is estimated to be 27 pounds per capita. This is 3.4 pounds more per capita or 431 million pounds total than is estimated. As will be pointed out later in the report, the production of young chickens could be greatly increased if proper action is taken by the Department.

Turkeys: The civilian supply of turkeys in 1943 (table 3) is estimated to be 470 million pounds or 3.7 pounds per capita. This compares with 478 million pounds or 3.7 pounds per capita in 1942, 477 million pounds or 3.6 pounds per capita in 1941 and an average of 344 million pounds or 2.7 pounds per capita, for the period 1935-39. The per capita civilian supply

1941 and estimated 1942-43

Year	Production ports of year	Imports of first year	Total supply ports	Lend-lease ports	Eggs		Stocks	Domestic distribution	
					for hatching	for laying		Military of year	Civilian of year
EGGS IN MILLIONS									
1935-39									
1941	5,743	19	115	5,871	7	210	222	2/ 187	93 5.1
1942	42	24	147	570	266	3/ 300			
1943	101	36	90	1,100	1,000	300	300		
EGGS IN MILLIONS (Estimated)									
1935-39	2,411	2	110	2,523	2		109		2,411 1
1941	2,722	?	140	2,863	3	1	161	52	2,648 20
1942	2,114	150	150	2,264	150	150	150	150	2,264 15
1943	00	1	105	3,466	3	48	160	264	2,901 16
EGGS IN MILLIONS (Estimated)									
1935-39	350	1/	23	373			29		344 2
1941	474	1/	61	535			50	8	477 3
1942	500	1/	50	550	4		50	18	478 5
1943	500	1/	50	550			50	30	470 3

Eight eggs to a pound.

1/ Buildings 112.1; Government buildings (including dried) 79 million.

2/ Civilian buildings 112.5; Government buildings (including dried) 357 million.

Less than 500,000 pounds.

turkeys for 1943 is thus estimated to be about the same as in 1942, 2.6 percent above 1941 and 37.0 percent above the average for the period 1935-39.

Turkey prices in 1943 are likely to rise further and probably will reach the highest of the minimum ceiling levels (28.8 cents per pound) by the end of next year. With such prices and consumer incomes in prospect, it appears that prospective supplies will be about ample to meet the demand. If turkey prices, however, were to remain at the present level, the demand for turkey would be 4.5 pounds per capita. This is about 1 pound per capita more than is in prospect. As will be pointed out later, the production of turkeys could be increased.

In the case of both chicken and turkeys, the demand will undoubtedly be further increased due to the expected shortages in meats and fish.

Dairy Products

Total Milk. The civilian disappearance of total milk for human consumption (table 2) is estimated to be 117,741 million pounds compared to 116,405 million pounds in 1942, 107,554 million pounds in 1941 and an average of 104,007 million pounds for the period 1935-39. This is equivalent to per capita civilian consumption of 814.6 pounds in 1943, 842.2 pounds in 1942, 819.6 pounds in 1941 and an average of 806.4 pounds for the period 1935-39. Thus, the estimated civilian per capita supply for 1943 is 3.3 percent less than in 1942, 0.6 percent less than in 1941 but 1.0 percent higher than the average for the period 1935-39.

If prices of dairy products were frozen at present levels, it is estimated that a total production of 128 billion pounds of milk would be required to meet normal civilian, military and lend-lease needs, even though stocks were reduced to normal levels at the end of 1943. Hence, under the latter assumption with respect to price, an deficit of about 8 billion pounds appears likely with respect to total milk production in 1943. Moreover, in view of the emergencies which may arise, it probably is desirable to maintain stocks at a higher than normal level.

The above considerations take into account only normal relationships between consumer income, prices and consumption of dairy products and make no allowance for the shortage of meats and the limited supply of fats and oils which will undoubtedly have an effect on the demand for dairy products.

No difficulty is anticipated in reaching the indicated production (table 2) for any of the individual dairy products except possibly spray-process dried whole and skim milk. Military requirements for the latter may be considerably larger than those indicated in table 2 since dried milk may need to be substituted for fresh milk in some cases. Ice cream production may be lower than anticipated because of the shortage of sugar.

Fats and Oils

The total supply of fats and oils (excluding butter) for civilian use (table 2) is estimated to be 1,035 million pounds for 1943.

1941 and estimated 1942-43 - Continued

Table 5 - Sales and disposition, monthly and bimonthly, calendar year
average 1935-39, 1941, and estimated 1942 and 1943

Year	Factory				Disposition				Domestic disappearance			
	Total supply	stocks end of year	Regular exports	Lend-lease exports	Military	Civilian	Military	Civilian	Military	Civilian	Military	Civilian
	Mil.	lb.	Mil.	lb.	Mil.	lb.	Mil.	lb.	Mil.	lb.	Mil.	lb.
Lard, excluding use in shortening, etc.												
Average 1935-39:	1,715	104	192	---	---	---	1,419	11,0				
1941	2,508	187	186	237	21	1,877	14,3					
1942	2,917	117	150	750	22	1,878	14					
1943	3,047	27	150	1,000	1	1,793	14,1					
Compounds and vegetable cooking fats (shortening)												
Average 1935-39:	1,590	49	2	---	---	---	1,539	11,9				
1941	1,475	53	4	---	26	1,392	10,6					
1942	1,323	43	5	25	85	1,165	9,0					
1943	1,474	12	5	50	201	1,175	9,1					
Margarine (fat content)												
Average 1935-39:	308	4	1	---	---	---	303	2,3				
1941	303	4	2	---	---	---	297	2,3				
1942	333	4	2	40	---	---	287	2,2				
1943	301	4	2	50	---	---	291	2,2				
Other food products and uses												
Average 1935-39:	1/	1/	25	---	---	---	857	6,6				
1941	1/	1/	59	---	18	1,105	8,4					
1942	1/	1/	140	50	34	1,016	7,8					
1943	1/	1/	240	150	62	661	7,6					
Total												
Average 1935-39:	1/	1/	220	---	---	---	4,118	31,8				
1941	1/	1/	231	237	65	4,671	35,6					
1942	1/	1/	297	865	141	4,346	33,5					
1943	1/	1/	397	1,280	277	4,233	33,4					

1/ Statistics on stocks not available.

compared with 4,346 million pounds in 1942, 4,671 million pounds in 1941 and an average of 4,118 million pounds for the period 1935-39. On a per capita basis, this is 33.4 pounds for 1943, 33.5 pounds for 1942, 35.6 pounds for 1941 and an average of 31.8 pounds for the period 1935-39. The expected civilian supply for 1943 on a per capita basis is, therefore, estimated to be about the same as in 1942, about 6 percent less than in 1941 and about 5 percent larger than the average for the period 1935-39.

On the basis of normal relationships between disappearance of food fats, the average price of food fats and income of industrial workers, civilian demand for food fats (excluding butter) at present ceiling levels is estimated to be 36 to 38 pounds per capita in 1943. Thus, with only about 33 pounds available for this period there will be an estimated shortage of from 3 to 5 pounds per capita in the supply of food fats for civilian consumption. This estimated shortage may be somewhat decreased by conservation of animal fats and a probable reduction in the use of butter, lard and other fats resulting in baking cakes due to a reduction in the supply of sugar.

Unless there is rationing of food fats at the consumer level, strong pressure will be exerted against the price ceilings on fats now in effect as a result of the limitations of available supplies and the rising level of consumer purchasing power. At the levels of consumption indicated under the Fats and Oils Allocation Program (page 7) and with an indicated income of industrial workers at 260 percent of the 1935-39 average, it is estimated that the wholesale prices of fats and oils would average considerably higher without ceilings than with ceilings in effect. Retail prices of fats also would be higher, though probably not in the same proportion.

Fish

The total supply for civilian consumption of fresh, frozen, and canned fish for 1943 (table 6) is estimated to be 1,520 million pounds compared with 1,581 million pounds in 1942 and 1,768 million pounds in 1941. On a per capita basis this is 16.4 pounds in 1943, 10.6 pounds in 1942 and 13.5 pounds in 1941. (No comparable data are available for the period 1935-39 but it has been estimated by the Bureau of Fisheries and Wildlife that per capita consumption of fish averaged about 13.3 pounds during those years.) It appears, therefore, that unless the situation shows a marked improvement in the near future, the civilian supply in 1943 of fresh, frozen, and canned fish on a per capita basis will be about 2 percent less than in 1942, about 23 percent less than in 1941 and about 22 percent less than the average for the period 1935-39.

The estimated decrease in the supply of fish for 1943 is accounted for by large lend-lease and military requirements and curtailed production due to purchases of ships by the Government and wartime navigation restrictions.

The expected shortage of fish will undoubtedly tend to aggravate the meat situation and will also increase the demand for other protein foods.

The total civilian supply of fresh fruits, canned fruits, and canned juices are expected to be materially smaller in 1943 than in 1942 and 1941 (table 7). The reduction in the civilian supply is accounted for by large defense and military requirements (for canned fruits and juices) and the prospective packs for some individual items.

Since no price ceiling has been placed on fresh fruits, the indicated supply will be consumed at higher prices. However, the price of fruit fruits is not expected to reach 110 percent of parity.

With an expected increase in the price ceiling for canned fruits (about 2% percent higher than the average price for 1941-42) it is estimated that the demand for most canned fruits will probably equal the supply but this would entail depletion of stocks normally carried into the new canning season.

Fresh Vegetables

The total 1943 civilian disappearance of fresh vegetables (table 8) on a per capita basis is estimated to be 198.4 pounds compared to 210.2 pounds in 1942 and 206.5 pounds in 1941. The total per capita 1943 civilian disappearance of processed vegetables is estimated to be 27.5 pounds compared to 33.8 pounds in 1942 and 32.9 pounds in 1941. The 1943 civilian per capita disappearance of sweetpotatoes and dry edible beans (table 9) will be larger than in the previous 2 years. The supply of potatoes will be over than in the recent past.

Since prices of fresh vegetables are not controlled by any ceilings, it is estimated that with the assumed production and the expected increase in national income, prices received by farmers for 17 major fresh vegetables would increase in 1943 from 15 to 20 percent over 1941. If, however, prices are frozen at the 1942 parity level then the total demand for fresh vegetables in 1943 is expected to exceed the supply by about 3 pounds per capita. This is only about 1-1/2 percent of the estimated 1943 civilian per capita disappearance.

The 1943 total supply of sugar for civilian and industrial consumption (table 10) is estimated to be 8,560,000 short tons. Assuming 1/2 pound ration per person per week, would yield a carry-over at the end of 1943 of 3,918,000 short tons which is 9 percent larger than at the end of 1942, 4 percent larger than at the end of 1941 and 45 percent larger than the average carry-over for the period 1935-39. If the ration is increased to 3/4 pound per person, the carry-over at the end of the year would be 4,179,000 short tons. Assuming 1/2 pound ration, the per capita will be 11.8 pounds of sugar compared with 87 pounds in 1942, 112 pounds in 1941 and an average of 104 pounds for the period 1935-39. If the ration is increased to 3/4 pound in 1943, the per capita will be 83.7 pounds. It must

^{1/} All figures refer to raw basis, except the per capita ration.

Table 9c—Vegetables: Supply and disposition, calendar years,
1935-39, 1941-43, and estimated 1944.

Year	Production on portions of land	Stocks on farm-waste and where shrunk- to size	Grown in age of storages	Disposition			Stocks and Lend- lease of Mili- tary year	Domestic disappearance
				fed bu.	live- bu.	Regu- ments for seed stock and ex- ports		
1935-39	370,183	1,014	106,398	477,565	31,852	27,774	1,935 (2,000)	172,528
1941	357,783	934	111,593	470,410	26,136	22,209	2,362 1,974	304,424
1942	378,175	1,002	104,633	453,808	26,200	22,070	1,600 1,500	19,882
1943	365,000	900	105,060	470,900	26,300	20,700	1,500 1,500	465
Potatoes								
1935-39	74,370	—	10,793	89,163	10,000	5,300	—	10,613
1941	63,284	—	9,615	72,896	5,690	5,293	—	9,283
1942	69,487	—	9,283	78,770	5,700	5,300	—	11,364
1943	70,000	—	11,364	81,364	7,700	5,000	—	0
Cucumbers								
1935-39	74,370	—	10,793	89,163	10,000	5,300	—	10,613
1941	63,284	—	9,615	72,896	5,690	5,293	—	9,283
1942	69,487	—	9,283	78,770	5,700	5,300	—	11,364
1943	70,000	—	11,364	81,364	7,700	5,000	—	0
Beans, dry, edible								
1935-39	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1941	13,245	249	5,481	18,975	809	—	158	352
1942	17,154	—	13,500	30,854	2,1,010	—	347	—
1943	10,852	—	13,500	33,452	2,1,000	—	320	—
Total	17,900	—	15,452	37,792	2,1,000	—	607	—

1 Bag of 100 pounds each.
2 Total saved for seed.

Table 10.- Sugar: Supply and disposition, calendar years 1935-39
average, 1941 and estimated 1942-43

(In terms of raw)

Year	Supply				Disposition				Domestic disappearance		
	Prod.	Stocks	Govt.	Regu-	Lend-	Stocks	Mili-	Civil-	Civilian		
	duc-	Im-	first	Total	stock	lar	lease	end	tary	ian	per
	duction	ports	of	January	pile	ex-	ex-	of	year	1/	capita
	\$1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	
	short	short	short	short	short	short	short	short	short	short	
	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons	Lbs.
1935-39	1,994	4,877	2,620	9,491		92		2,695	6,704	104.0	
	2,070	5,548	3,339	11,277		70	--	3,762	95	7,350	112.0
1941	2,461	3,781	3,762	10,004	250	50	250	3,593	208	5,653	87.0
	2,275	3,420	3,593	9,288		50	250	3,913	428	2/4,642	2/74.8
								3/3,189		3/5,371	3/88.7

1/ Includes industrial consumption.

2/ Assuming 1/2 pound ration.

3/ Assuming 3/4 pound ration.

be pointed out that the carry-over and per capita estimates are based on the assumption that each person will take his allotted ration.

Wheat, Rye and Rice

The September crop report indicated that production of wheat in 1942 is 3.8 percent above 1941 and 28.7 percent above the average for the period 1935-39. The production of rye is 33.3 percent above 1941 and 30.4 percent above the average for the period 1935-39. The production of rice is 39 percent above 1941 and 45.2 percent above the average for the period 1935-39.

The civilian per capita disappearance of wheat for food in 1943 (table 11) is estimated to be 230.5 pounds compared to 222.2 pounds in 1942, 223.8 pounds in 1941 and an average of 222.4 pounds for the period 1935-39. The carry-over of wheat at the end of 1943 is estimated to be 1,040 million bushels compared to 1,237 million bushels at the end of 1942, 983 million bushels at the end of 1941 and the average carry-over of 517 million bushels in the period 1935-39. This large carry-over is sufficient to take care of any possible increase in lend-lease requirements and civilian demand. The price of wheat is expected to be \$1.12 per bushel compared to \$1.05 in 1942, 92 cents per bushel in 1941 and an average price of 81 cents per bushel in 1935-39.

The civilian per capita disappearance of rye in 1943 is estimated to be 4.0 pounds compared to 3.9 pounds in 1942, 3.8 pounds in 1941 and an average of 3.9 pounds for the period 1935-39. The carry-over of rye at the end of the year is estimated to be 58 million bushels compared to 60 million bushels at the end of 1942, 43 million bushels at the end of 1941 and an average carry-over of 29 million bushels for the period 1935-39. The price per bushel for rye is expected to be 65 cents in 1943 compared with 60 cents in 1942, 48 cents in 1941 and an average price of 51 cents for the period 1935-39.

The estimated civilian per capita disappearance of rice in 1943 is 5.8 pounds, which is the same as the average for 1935-39 and 0.1 pound more than in 1941 and 1942. Stocks of rice at the end of the year are expected to be 43.4 million bushels compared to 42.4 million bushels in 1942, 37.1 million bushels in 1941 and an average of 34.2 million bushels in the period 1935-39. With the price ceiling on rice it is estimated that the price per bushel will be \$1.40 in 1943 compared to \$1.56 in 1942, \$1.09 in 1941 and an average price of 73 cents in the 1935-39 period.

Oats, Barley and Corn

The September crop report indicated that the production of corn in 1942 will be 12.8 percent above 1941 and 29.7 percent above the average for the period 1935-39. The production of barley will be 16.9 percent above 1941 and 77.4 percent above the average for the period 1935-39. The production of oats will be 15.1 percent above 1941 and 31.5 percent above the average for the period 1935-39. It, therefore, appears that food stocks will be just about large enough to take care of lend-lease and civilian demands.

Table II. - Wheat, rye and rice: Supply and disposition, calendar years,
1935-39 average, 1941 and estimated 1942-43

	Supply						Disposition						Domestic disappearance per capita
	Mil. bu.	Mil. bu.	Mil. bus.	Mil. bu.	Mil. bu.	Mil. bu.	Ship- ments ^a	Lend- lease ^b	Stocks: United States ^c	Mili- tary ports ^d	Ci- vilian ports ^e	Other countries ^f	
Year	Crop ports	Imports of supply	Total year	Ex- ports	Terri- tories	Ports	United States	Ports	Year	1/	per capita		
Wheat													
1935-39	762	15	482	1,259	51	3	0	517	0	478	210	222.4	
1941	946	6	719	1,671	19	3	1	988	7	490	163	223.8	
1942	982	2	988	1,972	17	3	26	1,237	12	488	189	222.2	
1943	650	2	1,237	1,889	16	3	43	1,040	41	484	262	230.5	
Rye													
1935-39	46	3	27	76	2	0	0	29	0	9	36	3.9	
1941	45	10	32	87	0	0	0	43	0	9	35	3.8	
1942	60	3	43	106	0	0	2	60	0	9	35	3.9	
1943	42	3	60	105	0	0	3	58	0	9	35	4.0	
Rice													
1935-39	49.8	3.5	32.6	85.9	18.7	0	0	34.2	0	26.9	6.1	5.8	
1941	52.1	0.5	37.6	90.2	15.7	10.1	0.5	33.1	0.4	26.7	3.7	5.7	
1942	72.3	0.2	33.1	105.6	13.8	11.5	6.5	42.4	0.6	26.5	4.3	5.7	
1943	71.4	0.2	42.4	114.0	15.0	13.0	9.4	43.4	2.4	26.5	4.3	5.8	

^a/ Other includes feed, seed and alcohol.

^b/ Lend lease estimated at 54,028,000 bushels in December 1941 adjusted to 52,041,000 bushels on basis of official estimate of stocks on January 1, 1942.

Table 22.—Corn, oats and barley, 1941 and average, 1935-39, and estimated 1945-46.

Year	Production	Supply			Demand			Domestic disappearance			
		Imports	Stocks first of year	Total supply	Exports	Ships to U. S. territories	Lend-lease	Stocks end of year	Military exports	Other 2/ L/	
1937-38	2,425,290	32,918	1,300	3,695,069	42,143	472	—	1,573,341	—	1,950,102	
1938	2,672,541	786	2,002	5,794	4,704,906	12,626	274	17,942	2,178,064	50	152,213
1939	3,015,415	530	2,178,084	5,194,529	1,600	490	14,250	2,275,000	197	162,766	2,641,312
1940	2,746,000	500	2,272,000	5,011,200	3,000	490	16,250	1,903,645	704	162,525	2,927,000
1941	1,116,107	6,022	302	1,944,169	—	—	—	—	—	—	—
1942	1,53,410	756	80	2,127,821	—	50	3,500	825,000	1,414	24,566	1,271,771
1943	1,110,000	50,000	822,000	2,015,000	—	50	4,500	700	2,622	20,000	1,251,000
1944	2,9,270	11,252	17	114,700	32,222	9,723	496	—	3/ 108,000	58,306	115,707
1945	52,704	1,006	3/ 198,000	598,013	3,004	612	3/ 210,000	3/ 953	61,788	113,082	27,6
1946	119,201	10,000	3/ 210,000	63,202	1,000	700	3/ 250,000	3/ 800	65,000	21,540	26,000
1947	273,000	20,000	3/ 250,000	616,000	500	800	3/ 229,370	3/ 1,350	66,000	20,000	250,000

1943 food supply. More at the end of the 1942 calendar will be
available in January 1943.

The estimated per capita consumption of corn, barley and oats used in
the civilian food products (table 12) is expected to be larger than the
per capita consumption in 1941, 1942 or the average consumption in the
years 1935-36.

NUTRITIVE VALUE OF 1943 FOOD SUPPLY

An estimate of the nutritive value of the probable 1943 food supply
has been made by the Bureau of Home Economics and is shown in table 13 in
terms of recommended dietary allowances.

The table gives the nutritive value of the probable 1943 food supply obtained from studies
of family food consumption by the Consumer Purchase Study in 1935-36. This
table also gives the average per capita values representing the dietary
recommendations of the National Research Council in 1941. The latter have
been derived by weighting the data for various age-sex-activity groups by
their distribution in the population in 1942.

The expected civilian food supply for 1943 appears to be about as good
nutritively as the average in 1935-36 but it furnishes fewer calories,
about the same amount of protein, and slightly less fat and carbohydrates
than in 1941. It has less vitamin A than in either 1941 or the average for
1935-36 chiefly because of smaller quantities of leafy, green, and yellow
vegetables which are important sources of this nutrient. The average quantity
of riboflavin is slightly higher for 1943 than for 1936 and about the same as
for 1941. As computed from uncooked foods, the supply meets the National
Research Council recommendations except for riboflavin. However, the losses
in certain nutrients during food preparation and serving have not been taken
into account in either of these estimates. These losses for some nutrients
and food groups amount to 50 percent or more of the total found in raw food
as produced. The National Research Council recommendations, on the other
hand, refer to quantities of each nutrient that should be ingested.

The best national diet we can look forward to in 1943 probably will
be only borderline in adequacy with respect to several nutrients. Also in
considering average figures such as those given in table 13, we should not
lose sight of the fact that there is unequal distribution of food among
families with different incomes and in different parts of the country. Hence,
while averages may seem to meet the recommendations of nutritionists, actually
a large proportion of families have diets seriously deficient in one or more
nutrients.

GENERAL RECOMMENDATIONS

Broiler and Turkey Production

Although production of commercial broilers and turkeys has increased
greatly in recent years, the output could be expanded considerably further

Table 1. Average consumption of selected nutrients in United States, 1943, per capita per day, with comparisons^{1/}

Year	Food	Pro-	Calci-	Phos-	Iron	Vitamin A	Vitamin D ^{2/}	Biacid	Thio- ^{3/}	Hibo- ^{4/}	(Nico-	Riboflavin	Vitamin C ^{5/}	acid)
<u>Interna-</u>														
Estimated civilian														
supply, 1943 ^{6/}	3,230	89	140	403	.88	1.5	15	5,800	110	1.8	1.9	1.6		
Consumption, 1941 ^{7/}	3,460	88	144	452	.37	1.5	16	6,600	110	1.9	1.9	1.7		
Family food consumption, 1945 ^{8/}	2,900	83	--	--	.87	1.4	14	7,100	90	1.6	1.9	1.5		
National Research Council dietary recommendations ^{9/}	2,800	66	--	--	0.9	--	12	4,700	70	1.6	2.3	1.6		

1/ Nutritive values based on figures for uncooked food except for Vitamin B which Council recommends.

2/ Total includes both visible and invisible fat.

3/ Disappearance data adjusted to retail basis from Bureau of Agricultural Economics, U. S. Department of Agriculture, U. S. Department of Agriculture, Bureau of Home Economics, Bureau of Consumer Purchases Study, Bureau of Home Economics, U. S. Department of Agriculture, based on reports of food delivered to the kitchen and eaten away from home. The proportion of families having diets which were below National Research Council recommendations for important nutrients was available at present; were as follows: Calcium 50 percent; Vitamin A 40 percent; riboflavin 60 percent; thiamine, 60 percent; riboflavin, 60 percent.

4/ Per capita figures based on 1942 population weights.

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unwise inappropriate action by the Department of Agriculture. In 1941 these two branches of the poultry industry supplied 900 million pounds of meat, liveweight basis. This year the output will be somewhat over 950 million pounds. It is very likely that production in 1943 could be increased another 100 million pounds, or more, to about 1.5 billion pounds through reasonable effort by the Department.

The increased output of broilers could be obtained largely through more complete utilization of existing facilities during otherwise slack periods of the year. In the past, broiler production has fluctuated considerably because of sharp changes in prices. A constant rate of broiler output will be approached as the seasonal variation in broiler prices is removed. The assurance of a reasonable support level would help considerably to stabilize the industry and bring about an immediate increase in production. With a continued tight meat situation, prices probably would be maintained above any such support level. At the present time broilers are excluded from "minimum" in the announced price support program and in several ways the Department has discouraged expansion in broiler output.

The production of out-of-season chicks in general farming areas could also be encouraged and a considerable quantity of meat obtained.

Turkey production could be increased greatly in western sections of the meat belt and probably to some extent in other areas of the country. Any material expansion would require some special effort by the Department this fall to encourage the setting of ample breeding stocks for next year. Any material expansion in turkeys should be encouraged primarily for marketing in early summer, after the usual starting time. This would allow for more complete utilization of breeding stock and hatcheries. The risk of weathering facilities also would be lessened since the late crop turkeys could be marketed after the peak in slaughter of other poultry. This, of course, would also aid the movement of the total supply into consumption. Some assurance of price support also probably would be necessary to secure the expansion in turkey production. This could be done on a seasonal basis.

On the average about 4 pounds of feed are needed to produce a pound of broiler and 4-1/2 pounds for 1 pound of turkey (liveweight basis). To produce 1 pound of hog, about 4-1/4 pounds of feed are required. A hog produces more calories per unit of feed than a broiler but on the basis of yield of protein the chicken is superior. Taking these two criteria together there is little difference between broilers and turkeys on the one hand and hogs on the other.

Increasing Hog Production

Due to the limited meat packing capacity, it is not feasible to recommend a large increase in the spring pig crop. However, a further increase in the fall pig crop is recommended. The fall pig crop would go to market during the late spring and summer when the meat supplies are seasonally short.

Increasing Production of Dairy Products

Cheese. Cheese is the only dairy product which is a direct substitute for meat as consumers understand it. On the basis of plant capacity alone, cheese production in 1943 could be increased by 75 million pounds above that would be needed to provide for a normal carry-over, military and industrial needs, and normal civilian requirements under a policy calling meat at current prices. The milk required to produce this much cheese would total 150 million pounds, and would allow for an increase in cheese consumption of 16 percent above the assumed consumption in 1943. This increase would be equivalent to 3 percent of the deficit in meats.

Dried Skim Milk for Human Consumption. It is estimated that with present plant capacity, 750 million pounds of dried skim milk could be produced for human consumption. The estimated production in 1943 is 675 million pounds. Hence, an additional 75 million pounds could be produced, all of the roller-process type. This would require 800 million pounds of liquid skim milk and would reduce the supply of liquid skim milk for animal feed by only a negligible percentage. (50 billion pounds of skim milk is usually fed.)

While roller-process skim milk is not suitable for reconstitution for fluid (beverage) use, nevertheless, it can be used with efficiency for soups, puddings, and other cooking purposes. Since consumption of either fluids is much below minimum nutritional needs, and since, in addition, calcium and protein are present in skim milk in the same quantity as in whole milk this would be a way of obtaining the above without the necessity of expanding fluid milk production.

Increasing the Supply of Fats and Oils

With the Fats and Oils Allocation Program (page 7) in effect, the other steps that may be taken to increase the fats and oils supply for 1943 are an increase in the production of peanuts for oil; a foreign purchasing program to acquire fats and oils; an intensified salvage program for collecting waste household greases; an education campaign urging households to use fats (especially cooking fats) more efficiently.

No increase in soybeans for oil seems at present feasible as the capacity for crushing is not sufficient to take care of any excess production. There is, however, sufficient crushing capacity for the care of a large production in peanuts. The limiting factors in the case of peanuts are labor, farm machinery, and storage facilities.

Increasing the Supply of Fruits

To help offset the expected lower production of all tree-borne fruits, the increase of local facilities for conserving fruits that go to waste in

the oranges or perish easily in distribution is recommended. Apricots, for example, should be dried in larger quantities to save the portions that perish locally. In some areas peaches deserve similar attention. Dried prunes and raisins are good sources of essential nutrients and more might well be included in average diets.

Because certain varieties of black currants are so high in ascorbic acid, as are also strawberries, the possibility of increased production of these fruits by 1944 or 1945 should be investigated. They are needed in areas which may not be removed from the citrus-growing regions to help safeguard diets in the face of increased difficulties in distribution of citrus fruits, and also to help in the direction of peacetime supply of ascorbic acid from a wider variety of foods.

Increasing the Production of Vegetables

The limiting factors in the production of fresh vegetables are the supply of labor and transportation facilities. In view of the above, production of consumption of certain types of vegetables in preference to others should be encouraged from a nutritional point of view.

~~Carrots~~ In view of their comparative ease of transportation and high nutritional value, the production of carrots should be increased. Carrots are among our best sources of vitamin A value from plants and their consumption should be encouraged.

~~Broccoli~~ Broccoli production in the West, to afford a fresher, milder-flavored supply at lower cost to eastern markets, might be a desirable step in the direction of replacing some of the less valuable cauliflower with a greener vegetable, higher in iron, vitamin A and perhaps other values.

~~Other green-colored and yellow vegetables:~~ Green celery of the Utah type is higher in vitamin A value and iron and probably in ascorbic acid than red celery and if feasible, its production should be encouraged. Green beans and green peas are widely used and should be available in larger quantities. Yellow pumpkin and yellow squash should be produced and used in large quantities with nutritional advantage to diets.

MEAT SUBSTITUTES

The following can supply in whole or in part some important nutrients which are furnished by meat:

~~Birds.~~ Broilers may serve for quick replacement in large urban markets, but in some areas more ducks, turkeys and rabbit may be used to advantage. In general, the edible portion is the equivalent of the lean meats from the larger animals.

Milk: Milk has substitutes for most of the nutrients to protein and phosphorus, but not in iron and calcium. On the other hand, milk is a better source of calcium and riboflavin than is meat, and both of these nutrients are unusual in meat, especially in the diets of low income urban families. Even with past trends of meat consumption, more milk could have been used with improvement in diets. Assuming that the production of milk cannot be increased much for 1943, the conservation of axis milk now going into animal feeds, by drying 16 per cent for human consumption and educating families to ways of using it in cooking, could make good the above deficiencies because all the minerals, the water soluble vitamins and the protein are found in the axis milk portion. The loss of whey in cheese manufacture represents a similar though less extensive waste of high quality protein, important minerals and vitamins. Whey solids incorporated into the final cheese product could reduce some of this loss.

Eggs: Eggs are good sources of several nutrients, especially protein and iron, and more can be used easily in diets to substitute for meat proteins.

Cereals: Cereals supply about 30 percent of the protein in the average diet, more at low income levels. Biologically the proteins from cereals are not as efficient as those from animal sources but they afford a good complement to milk proteins.

Wheat and oatmeal contain more protein than do other grains. The whole-grained flours and cereals afford more protein and iron and more of the vitamins found in meat than do the highly milled products.

Peanuts: Legumes — peanut meal, beans and nuts including peanut meal — can substitute protein for part of that from reduction in meat, but there is a low limit to the quantities that can be incorporated into diets acceptable for poor families. A market survey of peanut meal would be needed to educational purposes on the nutritive value and the culinary uses of the product.

THE ESTIMATED 1943 CIVILIAN FOOD SUPPLY RELATED TO THE PROBLEMS INCOME DISTRIBUTION

With incomes steadily rising and with more of the population at low incomes moving up to higher income levels, the pattern of consumption of the estimated 1943 food supplies among the income groups will probably differ greatly from the past. However, to obtain a good estimate of this pattern would require, among other things, a knowledge of the relationship between the price of a given commodity and the consumption of that commodity by individuals of a given income group and also a knowledge of the speed with which individuals and families of low incomes adopt the pattern of consumption of the higher income groups into which they have moved. Information on these points, however, are at present not available.

Assuming that price effects on the pattern of consumption are negligible as compared with major shifts in the income distribution and,

however, assuming adjustments to consumption patterns of higher income groups are made fairly rapidly, rough estimates of the probable consumption of the 1943 civilian food supply within several income groups have been made and are presented in table 14. 1/

It will be noted that, as in the past, the low income groups will get a smaller percentage of the 1943 per capita supply of most foods. 2/ In fact, it appears that the low income groups while getting more of certain foods than in the past, will receive an even smaller share of the United States average per capita than previously. This can be seen by comparing the per capita consumption figures in this table with table 15 which shows a similar pattern of consumption for 1935-36.

A similar computation based on the results of these two tables shows that in 1935-36 families and single individuals with incomes under \$1,500 had a per capita consumption of meat 15 percent less than the average United States per capita. In 1943, however, this group may have 26 percent less. The per capita consumption of dairy products in 1935-36 for this group was 10 percent less than the average per capita while in 1943 it may be 1 percent less. Again in 1935-36 the per capita consumption of leafy,

1/ The consumption pattern was obtained as follows: A rough estimate of the 1943 income distribution was supplied by the Bureau of Home Economics. This estimated income distribution and an estimated per capita income within each group was then applied to the consumption pattern of the 1935-36 Consumer Purchase Study (adjusted to national per capita disappearance for 1935-36) to obtain a new aggregate consumption for each income group and for each of several food categories. The estimated 1943 total civilian supply of each commodity was then distributed among the income groups in the same proportion as these new aggregates for that commodity were distributed. The consumption figures in table 14 are therefore not the average per capita that would be consumed by individuals in a given income group but rather a per capita which has been adjusted to the available income. In actual practice this type of adjustment is made through the mechanism of prices. These estimates, of course, will become invalid if rationing of any of these commodities is instituted.

2/ Cereals and grain products which are consumed in large quantities by the low income groups are not given in this table because time did not permit converting the estimated 1943 grain supplies into products such as bread, white flour, etc., to make them comparable with the Consumer Purchase Study.

Table 14.- Estimated 1943 per capita consumption of major food categories by income level 1/

Food category	Average for:		Per capita consumption, families and individuals with incomes of						
	Total population	Urban population	\$500- \$1,000	\$1,000- \$1,500	\$1,500- \$2,000	\$2,000- \$3,000	\$3,000- \$4,000	\$4,000- \$5,000	\$5,000+
	Lb. 1	Lb. 2	Lb. 3	Lb. 4	Lb. 5	Lb. 6	Lb. 7	Lb. 8	Lb. 9
<u>Meats</u>									
Beef	48.3	19.9	31.6	40.5	46.8	50.6	55.7	63	
Seal	6.6	2.6	3.1	4.7	5.8	7.1	8.4	10	
Lamb and mutton :	7.1	.6	1.5	2.8	4.5	6.5	9.8	19	
Bacon and salt :									
side	18.6	25.4	18.6	17.1	17.0	17.1	19.1	21	
Other pork	34.5	16.6	23.6	31.8	33.5	36.8	39.8	42	
Poultry	20.6	8.5	10.7	12.6	14.2	18.0	25.9	48	
Other meat	12.8	7.2	12.8	14.9	15.1	14.3	11.4	9	
Sea Food	10.4	8.5	8.5	8.9	9.6	10.0	11.4	14	
Eggs	39.4	23.1	31.7	36.8	41.1	41.1	42.6	46.6	
<u>Dairy Products</u>									
Fluid milk and cream (milk etc.)	310.1	152.7	97.4	140.1	148.6	173.1	173.1	173.1	
Cheese	5.1	2.7	3.1	4.2	4.9	5.6	6.0	5.1	
Butter	15.3	8.6	12.5	13.7	15.0	15.7	16.9	19.1	
Ice cream	14.6	2.1	5.7	9.0	12.0	15.2	19.1	27	
Evaporated and condensed milk	20.7	16.0	24.4	24.1	23.4	21.1	16.9	17	
Other fats & oils	33.4	37.6	35.0	32.7	31.7	31.7	32.7	31	
<u>Vegetables</u>									
Potatoes	144.6	100.8	135.9	150.3	148.1	146.4	147.3	151	
Fresh tomatoes	5.4	2.7	1.1	1.2	1.7	1.5	1.4	1.7	
Fresh leafy, green and yellow									
lettuce	57.6	27.5	35.7	35.3	52.1	51.1	51	57	
fresh other	22.6	11.2	11.2	11.2	11.7	11.5	11.4	11.7	
Canned tomatoes	9.5	4.1	6.0	7.4	8.4	9.7	11.2	14	
Canned leafy, green & yellow	6.9	3.7	5.9	7.7	8.4	9.1	10.1	11	
Canned, other	5.6	1.9	1.8	2.1	10.2	10.7	10.2	10	
Dried beans	8.7	14.1	12.7	11.2	9.0	7.6	6.6	5.4	
<u>Fruits</u>									
Fresh citrus	52.4	8.4	19.3	32.2	43.1	55.1	69.4	97.5	
Fresh other	80.9	31.0	42.8	54.7	66.4	81.5	101.7	116	
Canned	20.4	8.4	11.1	15.9	18.6	21.5	24.9	30	
Dried	5.3	2.4	3.6	4.9	5.2	5.6	6.2	7.5	

1 Based on Consumption Pattern derived from 1935-36 Consumer Purchases Survey and estimated income range data. Excludes farm-to-retail market losses.

2 Based on urban population since farm production estimates are not available.

Table 15.- Estimated 1935-36 per capita consumption of major food categories by income level 1/

Food category	Average for total popula- tion	Per capita consumption, families and single individuals with incomes of							\$5,000 and over	
		Under \$500		\$500- \$1,000		\$1,000- \$1,500		\$1,500- \$2,000		
		Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	
<u>M</u> eat										
Beef	45.1	23.2	37.3	46.3	54.1	59.0	63.3	73.0		
Lamb	7.6	4.2	5.0	7.3	9.1	11.2	13.1	16.8		
Lamb & mutton	6.7	3.1	2.8	5.0	7.9	11.8	17.1	35.4		
Bacon and salt side	17.1	22.4	17.3	15.6	15.4	15.4	17.0	18.4		
Other pork	24.4	14.0	19.9	26.6	27.9	30.8	33.5	35.6		
Poultry	15.7	9.8	12.1	14.3	15.9	19.2	28.0	49.6		
Other meat	12.5	6.9	12.2	14.3	14.7	14.3	11.3	9.8		
Sea Food	13.3	12.3	12.3	12.7	13.8	14.3	16.0	20.1		
	31.4	20.8	28.5	32.7	35.5	37.0	37.5	41.4		
<u>D</u> airy Products										
Fluid milk and cream (milk equivalent)	338.8	203.2	310.4	360.4	362.7	383.7	418.0	512.8		
Butter	16.6	10.6	15.5	16.9	18.4	19.3	20.8	23.1		
Ice cream	8.8	1.9	5.2	8.3	11.1	14.1	17.0	25.3		
Evaporated and condensed milk	14.8	10.5	16.7	16.2	16.1	14.7	11.0	11.1		
Other fats & oils	28.6	31.8	29.8	27.9	26.7	26.3	26.7	30.8		
<u>V</u> egetables										
Potatoes	158.1	114.5	154.2	171.7	169.6	168.3	167.0	171.5		
Fresh tomatoes	11.4	5.3	11.6	14.3	16.8	18.8	21.1	26.1		
Fresh leafy, green & yellow	60.2	35.7	49.3	57.9	67.7	75.1	83.1	102.8		
Fresh other 2/	50.3	33.6	38.9	46.3	57.5	61.7	73.5	97.1		
Canned tomatoes	10.9	5.0	8.8	10.9	12.5	14.3	16.0	21.7		
Canned leafy, green & yellow	9.7	5.0	8.0	10.3	11.3	12.4	13.5	15.6		
Canned, other	20.3	9.1	18.3	23.2	24.1	24.5	24.2	24.2		
Dried beans	8.6	11.1	9.9	9.0	7.4	6.0	5.3	4.3		
<u>F</u> ruits										
Fresh citrus	36.6	9.1	21.6	34.5	46.3	58.9	74.4	106.0		
Fresh other	99.7	54.2	75.0	93.4	112.7	135.1	168.0	248.3		
Canned	19.0	10.5	13.7	19.4	22.5	25.9	30.2	37.6		
Dried	6.0	3.2	4.8	6.6	7.0	7.5	8.2	9.9		

1/ Based on consumption patterns derived from 1935-36 Consumer Purchase Study adjusted to estimated disappearance data. Excludes farm-to-retail market losses.

2/ Based on urban population since farm production estimates are not available.

green, and yellow vegetables, and fresh fruits for this group was 17 and 23 percent, respectively, less than the average per capita. The corresponding percentages for 1943 are 31 and 43 percent. However, it must be remembered that in 1935-36 the number of people in this income group was 64 percent of the total population while in 1943 it is expected to be only about half this percentage.

THE PERCENTAGE OF THE TOTAL FOOD SUPPLY TAKEN BY LEND-LEASE,
MILITARY AND CIVILIAN

The amount of our total food supply that goes to our military forces and lend-lease is of great public interest and is frequently distorted by the enemy in its propaganda to the United States. In order to supply the proper authorities with information table 16 was prepared. This table shows the estimated percentage of the total supply of various foods that goes to our military forces, lend-lease, civilian, and other sources.

Although the percentage of the total food supply that goes to lend-lease and our military forces has increased in recent years, the total civilian supply has not decreased in the same proportion. This is due, of course, to the fact that our production of food has greatly increased in the past few years. This fact is brought out in the last column of the table which gives civilian per capita supply for the years 1941, 1942, and 1943 as a percentage of the 1935-39 average.

Table 16.- The percentage distribution of the total food supply and civilian per capita as a percentage of the average for 1935-39, by calendar years, 1941-43

Item and year	Total supply = 100					Civilian per capita as percentage of 1935-39 average
	Regular exports and shipments	Lend-lease	Carry-over	Military	Civilian	
	Percent	Percent	Percent	Percent	Percent	
All meats:						
1941	1.3	2.8	3.0	2.4	90.5	112.4
1942	.4	11.3	3.2	7.7	77.4	108.6
1943	.3	12.9	3.0	12.4	71.4	111.1
Fish						
1941	1.2	7.9	16.7	1.9	72.3	101.5
1942	2.4	11.7	12.8	5.4	67.7	79.7
1943	.4	11.2	9.9	10.1	68.4	78.2
Eggs 1/						
1941	.1	3.6	3.2	1.6	87.8	105.1
1942	.1	12.8	4.4	3.8	75.3	105.3
1943	.1	16.4	4.1	6.0	69.9	107.7
Poultry						
1941	.1	2/	6.2	1.8	91.9	111.2
1942	.1	.9	5.6	4.0	89.4	122.9
1943	.1	1.2	5.2	7.3	86.2	127.6
Total milk:						
1941	.9	1.6	4.6	1.9	91.0	101.6
1942	.5	4.4	4.1	3.7	87.3	104.4
1943	.5	7.6	2.4	6.9	82.6	101.0
Fats and oils (including butter) 3/						
1941	3.2	3.2	3.4	1.6	88.6	106.6
1942	3.8	11.0	2.4	3.3	80.0	103.1
1943	4.6	15.2	2.0	5.8	72.4	103.5
Fruits 4/						
1941	2.8	1.6	.8	2.0	92.8	114.3
1942	2.5	1.3	.7	6.5	89.0	98.6
1943	2.5	1.6	.8	10.9	84.2	91.6
Vegetables 5/						
1941	.7	.7	15.8	2.1	75.1	99.2
1942	.5	.8	15.8	5.0	72.5	101.0
1943	.5	1.1	15.1	9.4	68.6	95.5
Grains 6/						
1941	2.3	.1	57.8	.4	28.5	100.5
1942	1.8	1.5	61.6	.6	24.1	99.9
1943	1.9	2.6	54.4	2.1	24.8	103.5
Sugar						
1941	.6	--	33.4	.8	65.2	107.7
1942	.5	2.5	38.4	2.1	56.5	83.6
1943	.5	2.7	7/42.2	4.6	7/50.0	7/ 71.9

Continued -

Table 16.- The percentage distribution of the total food supply and civilian per capita as a percentage of the average for 1935-39, by calendar years, 1941-43 - Continued

1/ Excludes eggs used for hatching: 1941 - 3.7 percent; 1942 - 3.6 percent; 1943 - 3.5 percent.

2/ Negligible.

3/ Rough estimates for stocks for "Other food products and uses" were included in these estimates.

4/ Estimated on a crop year basis.

5/ Includes fresh, and processed vegetables, potatoes, sweetpotatoes and dry edible beans. The latter 3 exclude nonfood uses: 1941 - 5.6 percent; 1942 - 5.4 percent; 1943 - 5.3 percent.

6/ Wheat, rye and rice.

7/ Assuming one-half pound ration per capita.

